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ORIGINAL ARTICLES.

THE HORSE'S FOOT.

BY A. ZUNDEL.

(*Continued from page* 494.)

PUNCTURED WOUNDS OF THE FOOT.

The most serious of the injuries to which the foot is liable are those caused by foreign bodies which penetrate the middle zone, that being the most complicated portion of the structure. The symptoms will vary, according as the wound extends to the plantar aponeurosis, or only as far as this membrane; or lacerates the soft surrounding tissues without touching it; or it goes beyond this and injures the small sesamoid sheath, or even going deeper, severs the navicular bone, or its ligamentous attachment to the os pedis; or reaches the last phalangeal articulation.

A wound of the plantar aponeurosis is always very painful, especially when complicated with necrosis, in which case there is no weight put on the diseased leg, and continual lancinating pains and reacting fever are soon observed. The wound is then fistulous in character, and the suppuration then flowing from it meets with difficulties in its escape, which gives rise to a state of

general inflammation, and the foot becomes hot and very painful. If the necrosed scar becomes loose and sloughs off, being detached by suppuration, improvement soon ensues; but as the necrosis of the tendon has generally a tendency to spread, there is an increase in the character of the symptoms. If the wound extends to the sesamoid sheath from the start, the synovial fluid is observed escaping, first pure, but soon becoming milky and purulent in aspect, if the sheath has become inflamed, and easily coagulating in yellowish clots. The pain is then very great, much more so than when the aponeurosis alone is diseased. At times, by rapid closing of the plantar wound, or obstruction of the fistula, a warm swelling forms itself in the back of the coronet, which raises the skin by degrees and becomes elevated, prominent at one point, and giving a feeling of fluctuation. This swelling ends in ulceration, and allows the escape, sometimes, of an abundant synovial, purulent discharge.

The wound of the small sesamoid and of its ligament adds nothing to these series of symptoms. The probing of the tract will only determine it by the sensation of roughness which it will give; but generally one must be careful in using the probe, especially when the flow of synovia is absent. If the foreign body has pierced through the ligament, or has penetrated in the coffin joint, phalangeal arthritis is the consequence. The same result is likely to follow excessive inflammation of the foot and the macerating effect of the suppuration, in which case the tendon may soften down and give way. It may then also happen that this tendon retracts by the contraction of the muscular fibres, and can then be traced upwards to the back of the coronet, or of the fetlock, according as the giving way has taken place higher or lower.

With arthritis there is a hot, painful swelling of the whole coronet, with diffused œdema above the fetlock and the cannon, and extending upwards to the whole leg, complicating the lesion by lymphangitis and painful swelling of the lymphatic glands. Then subcutaneous abscesses are found round the coronet, with gangrene of the tissues; while again, there may be only an extensive fibro-plastic exudation, which ends in calcareous organization and anchylosis.

In the anterior zone, the only serious lesion met with is caries of the os pedis, characterized by great pain, continual lancination, loss of the use of the leg, and high reacting fever. There is abundant bloody and fœtid suppuration, and the probe gives the sensation of the soft resistance of the bone, of its rough condition, and its partial fragility. The caries having most generally a progressive march, complications of separation of the hoof, to a varying extent, are often seen; the pus arrives at the surface, between hairs and hoof: and diffused gangrenes are also often seen, which extend as well to the podophyllous as to the velvety tissues.

In the posterior zone, the only serious wounds are the lateral ones, which may injure the fibro-cartilage, and become complicated with their caries; of quittor or fistula down to the lacunæ of the frog, as we have seen in suppurating corn

Nails may penetrate the posterior zone through and through, coming out behind the coronet without danger. The sub-horny suppuration may detach the frog and be the only serious complication to be met with.

As *terminations* of all these injuries we may see resolution, suppuration, gangrene, softening of the tendons and phalangeal arthritis, and as sequelæ, bony tumors of the coronet, and anchylosis. The most serious complications are the dropping of the entire hoof, the rupture of the tendons, tendinous and cartilaginous quittors, for the injured foot, and chronic laminitis for the opposite one.

IV. *Prognosis.*—This varies according to the seat of the wound. Less serious in the posterior than in the anterior zone, it is less in the last than in the middle, where the region is so complicated and the nature of the tissues so different. The depth of the wound has also some influence on the prognosis. Wounds of the plantar aponeurosis are more dangerous than those of the plantar cushion; those of the sesamoid sheath are more so than those of the aponeurosis; they are still more serious if the bones are affected; the worst of all is that of the joint. The direction of the foreign body and its simple or complicated action, will also influence the prognosis.

This, we have already said, can be established by the severity of the lameness. The nature of the foreign body must also be taken into consideration; if blunt, which crushes the tissues, it is more dangerous than if sharp and pointed. In a flat or convex foot, punctured wounds are more serious than in a well-made foot. They are less serious in heavy than in light draught horses, as the former, though they may remain lame, are still useful. The excitable condition of a patient will also alter the prognosis. Wounds of the anterior feet are more serious than those of the posterior.

V. *Treatment.*—In all cases, the first indication is to obtain a natural cicatrization and natural repair, always more rapid and perfect than that which is gained by surgical interference. This is generally easily secured, and for this reason it is important to avoid too severe manipulations upon the injured foot. One must watch the progress of the disease, give the foot as much rest as possible, remove the shoe, thin down in its whole extent the plantar hoof, so as to avoid any pressure, and keep the foot in a cooling bath—ordinary cold water, to which often is added acetate of lead, sulphate of iron, or common salt, very beneficially. Poultices cold, preferable to hot, give excellent results. By this treatment the progress of the inflammation is checked and very often deep and serious wounds, even those where the tendinous sheath has been injured, are easily cured. If the lameness gradually diminishes, the case rapidly gets well; at any rate by this treatment the inflammatory process is diminished, and the painful pressure of the hardened and thick hoof is avoided.

In the winter, when cold baths are of difficult application, chloroformed or carbolized compresses may be applied round the foot. The hoof is thus softened, and the pain reduced. At other times a blister is applied round the coronet.

If the lameness remains, or seems to increase, it is due to tendinous necrosis or caries, and it becomes necessary to operate. Must the surgeon then have recourse to an operation, and make a simple wound with his sharp instrument? Or, is it still better to merely depend on natural resources, and assist them?

It is difficult to lay down any special rules. If the disease is

old, if the necrosis has progressed and is still increasing, a serious operation becomes necessary. If the necrosis is recent, one must be guided by external indications. Notwithstanding, (Remault remarks,) one should not be too hasty, as the animal must necessarily be laid up for several months afterwards. It is often sufficient, in a recently punctured wound, in order to avoid complications, to modify the condition of the fibrous tissues in the whole extent of the lesion, by applying substances simply antiseptic, or still better, slightly caustic. Rey employs the cold bath, in which he dissolves a pound of sulphate of copper for ten or fifteen quarts of water; by this means he has secured the speedy recovery of severe punctured wounds. For a long time, and with the same object, we have been using a mixture of equal parts of sulphate of copper and sulphate of iron, having first hollowed the foot downwards round the seat of the puncture, and the sole being pared down as thin as could be borne.

H. Bouley prefers the application of pulverized corrosive sublimate; after tracing the wound to its bottom, he fills it well with the powder. This remedy was already recommended by Solleysel, who used it in caries of the os pedis. Other practitioners prefer phenic acid, and claim for it great advantages. By the actions of the caustics upon the fibrous tissues exposed to necrosis, or already in that condition, a double salutary result is obtained; first, the transformation of the part, which is the seat of a progressing gangrene, into a chemical eschar; and, again, promoting the more active vascularization of the surrounding parts, and consequently their increased power of healthy reaction; conditions twice favorable to the sloughing of the eschar, and the process of repair following it.

When the wound has reached the os pedis, and this has become carious, a portion of the sole is removed, so that the suppuration can escape, the bone is scraped off, and a dressing of carbolized alcohol applied, kept on by a thin shoe or slipper, with tin plates.

When there is a fistulous wound, through which synovia escapes, yet not purulent, caustics are recommended. Solleysel preferred these, but blacksmiths used them so carelessly that they

soon were discarded. Since, however, they have been employed again, not in powder, but as trochiscus. Rey recommends the corrosive sublimate in conic pencils, introduced to the bottom of the fistula; by them he obtains an eschar, a solid clot, from the synovia, which closes up the wound and prevents the synovial flow, at the same time stimulating the granulations which close up the fistula.

We have already said that these measures must be used only when the synovia is not purulent, as then the escape of morbid liquids may be prevented. It is not then uncommon to see abscesses forming at the back of the coronet; generally not so serious as is usually believed; not as much as those which take place in front and which are due to suppuration of the articulation. After the running out of those abscesses, sometimes the wound of the foot assumes a better aspect, the symptoms improve, and the animal recovers rapidly. Injections of a very weak solution of tincture of iodine, as well as the baths of copper or iron, are then very advantageous. Hertwig advises the introduction of a seton through the sesamoid sheath.

This treatment is not always sufficient, especially where the lesions are deep. All the diseased structures must be then exposed, and they must be removed and the wound changed into a simple one, which well dressed, will heal without difficulty. The operation is required in proportion to the extent and nature of the lesion, and if this is recent, and comparatively superficial, if a piece of the foreign body yet remains in the wound, or if its removal has resulted in the sloughing of a small piece of dead tissue, it may be sufficient, the foot being pared thin, as already advised, to simply make an infundibuliform opening, various in size, so as to expose the bottom of the wound. For that purpose the drawing knife or the sage knife is used, a light shoe is put on, and a dressing of digestive ointment, ægyptiacum, or simply alcoholic mixtures, are kept on by plates. At times it is advantageous to assist the process of sloughing by the use of caustics, sulphate of copper, Villate's solution, tincture of iodine, &c. If the wound is near or at the heels, the branches of the shoe are shortened and an appropriate

dressing is put on. Subsequent dressings require the same care. Cicatrization goes on and the hoof soon returns to its normal condition. Sometimes the surgeon is called only when the inflammation is far advanced and suppuration already established. This peculiar condition is manifested by the swelling and heat of the parts, the acute pains, and often the high fever. The wound then must be at once enlarged and the pus allowed to escape, and this is the true operation for deep punctured wounds.

The operation becomes more serious if there is separation, partial or total, of the sole or frog, with a more or less advanced disorganization of the tissues underneath. If there is escape of purulent synovia, extensive cuttings are to be made.

In olden times, to perform the operation of the deep punctured wound, the entire removal of the sole was performed, without distinction or exception, and, notwithstanding the severe pains following it. In our days a portion of separated sole or frog only is taken off. This is done by slices and only so far as necessary for the other steps of the operation.

This operation is indicated when there is great pain, continuing without regard to what treatment has been followed. It is also when the plantar aponeurosis has assumed a greenish tint, diffused in its extent, without indication of a repairing process, with the marks of sloughing of the dead structure. The instruments required are various: sage knives, single and double; drawing knives of various sizes; a directory, bistouries and forceps.

The animal, properly secured, and placed under anæsthetics, if too irritable, (Bouley), the horny structures are removed wherever the suppuration has separated them from the soft tissues beneath, or the sole is only pared down thin, as well as the horny frog in its whole extent.

This first step of the operation completed, the operator introduces a directory into the whole tract of the fistula, and with a sharp sage knife a longitudinal incision is made, following the canulæ of the directory as a guide, above and below the fistulous opening, and in the direction of the antero-posterior axis of the foot. This done, with the sage knife held in full hand, with one cut the surgeon, by a deep incision, removes the greatest thick-

ness of the tissues all round the longitudinal cut he has just made, transforming the fistulous tract into a conical infundibulum, whose apex is at the bottom of the wound. If then the aponeurosis is not yet exposed, the operator removes with the forceps and bistoury whatever tissues still cover it.

Then follows the excision of the aponeurosis. This is measured by the extent of the necrosis. As a rule, it must reach a little beyond the diseased part, and by that operation the purulent synovia finds a free chance to escape.

If the sesamoid is sound it must be left alone, but if the diathrodial surface is roughened, ulcerated and on the way to desquammation, it must be scraped off with the narrow and long drawing knife.

The complications of arthritis cannot be interfered with by the surgeon. It is by general antiphlogistic treatment, and by local and external applications that they must be treated.

The operation ended, the dressing follows, and becomes one of the most important parts of the means of recovery. As light a shoe as possible is placed on the foot, a coat of hoof ointment, Venice turpentine, or tar, is applied upon the thinned sole; pads of oakum wet with alcohol, carbolized or not, are then carefully laid on the soft parts.

Some practitioners cover them with œgyptiacum, (Mandel); others simply with Venice turpentine (Lafosse.)

The pads or balls of oakum must not be too thick or hard, as no pressure is needed. The whole dressing is retained by plates, and several circular straps of tape above the coronary band. Cold water baths are always good afterwards.

In the subsequent dressings one must bear in mind that the work of repair, the granulating, is more rapid in the tissues of the plantar cushion and fleshy sole than upon the bone and tendinous tissue; and that in this case it is longer than upon bone if this has been scraped. The result of this is a wound which presents various aspects in its progress of cicatization. It often has a handsome granulating appearance over its entire surface, while at the bottom there may be a clot of coagulated synovia covering the surface of the sesamoid and the edges of the wound

of the plantar aponeurosis. A free escape of synovia must always be facilitated, and often the development of the granulations has to be controlled. If the cicatrization proceeds well and regularly, dressings need be changed but seldom, being satisfied with the cold bath, with copper solutions.

Dressings can be made with tincture of myrrh or of alœs; sometimes in the center with tincture of iodine. At times caustics are again used, while at others fragments of bone or of tendon have to be excised.

The entire closing of such a wound may sometimes take place in a month; but often, even without complications, two and three are required. Complications may easily make their appearance and interfere with the cicatrization. Sometimes pieces of necrosed tissues which remain at the bottom of the wound give rise to fistulous tracts, until they are entirely removed. In this case, twice as long a time may be necessary to a cure. The pain and intensity of the lameness, after the operation, do not accurately indicate the nature of the disease; the general phlogosis, especially the synovial inflammation, always causes a special acute pain, which for from three to six weeks may prevent the animal from resting his foot on the ground. This pain is entirely independent of the process of repair, and must not alarm the veterinarian. While the reacting fever is absent, and there is a good appetite and no swelling in the region of the coronet, the progress may be considered satisfactory.

After the cicatization of the plantar wound made during the operation, the parts may return to their physiological condition or nearly so; or, on the contrary, remain in an entirely abnormal condition. Often, indeed, the sesamoid sheath may become obliterated, the diarthrosidal surface has lost its smoothness and there is no more sliding upon it, the tendon having become united to it. The animal then remains lame, and cannot be utilized except in walking; if coronary anchylosis, ringbones are detected, and the application of firing is indicated. Sometimes neurotomy gives excellent results.

(*To be continued.*)

TRICHINÆ,

A LECTURE DELIVERED BEFORE THE STUDENTS OF THE AMERICAN VETERINARY COLLEGE.

By F. S. Billings, V. M.

(*Continued from page* 502.)

TRICHINIASIS AMONG SWINE.

Although the recorded observations of the calcified trichinæ in the muscles of man may be said to date back to about 1821, without any knowledge of their nature, however; and although the capsule was described, as we have seen, by Hilton in 1831, and the parasite by Pajet and Owen a few years later, still it was not until 1847 that Leidy discovered and described similar formations in the muscles of swine; the connection between those of man and swine being unquestionably established by Zenker, of Dresden, in 1860. Previous to this discovery of Zenker these parasites were looked upon more as curiosities, exciting the interest of naturalists, than as the actiological momenta to a most serious disease. Their direful nature was soon, however, more than satisfactorily established by numerous epidemics, to be hereafter noticed. It is to German investigation that we must look, almost entirely, for any authoritative statistics with reference to the numerical percentage of infection with these parasites, not only in our own family, but swine, for in no other country is there at present anything approaching a systematic examination of pork, and even in Germany there is much room for improvement, as there is in this entire field, which I am endeavoring to impress upon the people of this country, viz., *the relation of our animals and their diseases to human health.*

The following statistics are taken mostly from Virchow's "Archiv für path. Anatomie, etc.;" the "Vierteljahrsschrift für gerichtliche Medicin;" the "Deutsche Zeitschrift für Thiermedicin;" the "Veterinary Reports of Saxony," the "Magazin für Thierheilkunde," and its successor the "Archiv für Thierheilkunde," and the "Mitthielungen aus der Praxis der Preussischen Staate."

Dr. Petis, of Rostoch, gives the following statistics with reference to the examination of hogs at that place:

1869,	whole number examined	5,457	Trichnous	1
1871,	" "	6,520	"	2
1872,	" "	6,555	"	0
1873,	" "	6,441	"	3
1874,	" "	6,731	"	2
1875,	" "	7,222	"	5
1876,	" "	7,165	"	0
1877,	" "	7,562	"	2
		53,653		15

Infected.....1 in 3,543.

TRICHINIASIS IN GERMANY.

Dr. Uhde, of Brunswick, reports:

Whole number examined, 111,806. Trichinous, 29.

For previous years the percentage has been as follows:

In 1866–67	there was found	trichinous	1 hog	in every	6,700
" 1867–68	"	"	"	"	5,700
" 1868–69	"	"	"	"	14,500
" 1869–70	"	"	"	"	15,300
" 1871–72	"	"	"	"	13,387
" 1872–73	"	"	"	"	4,874
" 1873–74	"	"	"	"	5.129
" 1874–75	"	"	"	"	7,004
" 1875–76	"	"	"	"	13,183
" 1876–77	"	"	"	"	7,127
" 1877–78	"	"	"	"	5,879
" 1878–79	"	"	"	"	10,397
" 1879–80	"	"	"	"	3,857

PRUSSIA.

	No. Hogs Examined.	Trichinous.	Measles.	No. of Examiners.
1876	1,728,595	800	4,705	11,915
1877	2,057,272	701	5,434	12,865
1878	2,524,105	1,222	6,165	16,251
1879	3,164,656	1,938	9,669	17,413

HAMBURG.

1878.

Of 35,510	American hams	397	were trichinous.
14,003	" sides	85	"
17,113	European hams	3	"
222	" sides and shoulders and 10,838 hogs, none were found.		

1879.			
Of 79,764 American hams		1,087	were trichinous.
22,749	" sides and shoulders	196	"
28,710 European hams		2	"
16,204	" hogs	1	"
1880.			
Of 55,008 American hams		566	"
23,589	" sides	270	"
49,943 European sides, hams, etc.			free.

In 1872 *and* 1873 *numerous American sides and hams were found infected at Frankfort.*

At Leignitz 26 *American hams were examined and but two were found infected.*

In 1873 and 1874 at Magdeburg, 7,000 to 8,000 swine were examined, and but two found infected.

At Stettin, Erfurt and other places, American pork came in for its share of condemnation.

1875 and 1876 at Frankfort, out of 8,000 swine examined, 4 were infected.

1875 and 1876 at Gulen, 16 in 1,800 swine examined, 1 was infected.

At Minden, 59 *pieces of American pork were found diseased.*

Statistics with reference to the per cental infection of swine with trichinæ in England and France, as well as other continental countries, seem to be entirely wanting.

* Of 622 American sides examined at Rostoch, 12 were found infected.

Of 210 pieces examined at Gothenburg, 8 were found infected.

At Elbing 2 per cent. of those examined were found trichinous.

In Schleswig-Holstein, of 5,673 pieces examined, 47 were infected.

Examinations made in Germany in 1877 report 343 cases of infected American pork, and 183 cases of trichiniasis among human beings.

Under date of February 5, 1881, the *Sunday Herald*, of Bos-

* Heller Zienessen's Handbuch d. Pathologie, III., p. 411.

ton, published a special dispatch from Paris, with reference to an excitement which had been created at Lyons, France, with reference to the large number of trichinæ which had been found in some recently arrived American pork.

Prof. Mueller, of the Royal Veterinary Institute at Berlin, Prussia, wrote me in December, 1880, that of 88 American hogs which constitued a part of a recent shipment to Germany, 14 had been found highly trichinous by the inspector at Dresden.

* TRICHINIASIS IN ITALY.

So long ago as the 18th of February last, a special meeting of the Royal and National Veterinary Association of Italy was held to receive a communication from Signor Volante, the municipal veterinary surgeon of Turin. Volante reported that trichinæ had been discovered in some *American hams from Cincinnati*, which had been sold in Turin, and that 4 per cent. of the lot were infected. The Association addressed a memoir to the Minister of the Interior with reference to a general measure towards organizing an efficient meat inspection throughout the kingdom.

Excited by all this testimony, and by the demands of the pork interest of this country, our Government took up the question, but like almost everything else it does in connection with the suppression of animal pests, or animal hygiene, it took hold of the wrong end of the rope to begin with.

It wrote to our consuls and other foreign representatives for reports, and one who reads them may readily see that if, as they say, nationalism plays the most important role in the desire of foreign Governments to render difficult the importation and sale of American pork in their respective countries, it plays a far more important part than the desire of our own Government to get at exact truth.

It will not do for foreign representatives of this country to assert that there *are no trichinæ in American pork*, as has been done, in the face of the facts of direct observation.

It will not do for our State Department to publish a lie to the world, aye, a self-evident lie, as it did when it gave out a

* Veterinary Journal, Vol. 9, p. 286, 1879.

report with reference to the healthy condition of American pork, clauses 8, 9 and 10 reading as follows:

"8. That the percentage of American hogs infected with trichinæ is in all probability, by reason of the superiority of breed and feeding, much less than that among the hogs in any other country.

"9. That the freedom from trichinosis of the two great pork consuming centres of the West, Chicago and Cincinnati, furnishes the strongest possible evidence of the purity of American pork. In Chicago, for a series of years, during which 40,000 deaths were reported, with their causes, only two cases of trichinosis were reported. In Cincinnati during the same period not a single case was reported.

"10. That the reported cases of trichinosis have resulted from eating uncooked meat, shown to be inferior or rejected, and that thorough cooking entirely destroys this parasite and removes all danger in this regard from eating pork."

Let us examine these clauses from this wonderful State document in detail, and we shall see that whoever wrote it knew less about trichinæ than about the truth.

First.—Our Government had no right to issue a State document asserting that our pork contained less trichinæ than the hogs of any other country, until it had instigated a large series of examinations (made in the interest of scientific truth, not the American Government or people) at different places, and thus approximately establish what the real percentage of infection is.

Second.—"Superiority of breed or feeding" are two things which, as far as we know, have no influence on the inoculation of pigs with trichinæ. Of the breed certainly not, and as certainly not of feeding, as at present carried on, even in the West.

Third.—If the pork consumed at the packing houses of Chicago and Cincinnati *is so free from* trichinæ, why not publish the *figures*, showing the examinations made and by whom?

Perhaps it was the examination of 400 hogs by Dr. Paton at Chicago, April, 1881, among which he could not find a case of trichinosis, which led to this assertion; but while we personally doubt the accuracy of Dr. Paton's examination, still the re-

sult of but 400 examinations is not sufficient for a Government to support itself with, and to assert that trichinæ scarcely exists in our pork.

Fourth.—It is known that the Germans have a strong liking for uncooked, but smoked ham, and spiced hashed pork; owing to this they have more cases of trichinosis than any other people, but because they do this is it any reason why we should send them infected hogs, or that their Government should not take the most stringent measures to discover whether it did contain trichinæ or not, and act thereby? A German has the same right to eat raw or smoked pork as an American or an Englishman has to eat raw or rare beef, even though he may get a tape worm thereby.

Let us see if foreign Governments are not justified in looking upon American pork with suspicion, and our own equally bound to spare neither labor or expense in the endeavor to find out where trichinæ first come from.

These examinations were not made upon selected lots of swine, or upon lots from any one place, but the pieces to be examined were collected from lots of swine, at such days and times as I could find opportunity to examine them. The swine came mostly from the West, however. It is greatly to be regretted that the exact place where some of these lots came from could not be ascertained, and exact examinations made of the manner of feeding, surroundings, etc., but such systematic work must await a future day and abundant material support from the different State Governments.

The following is the result of my examinations in the summer of 1879:

Lot.	No. Swine Examined.	Non-infected.	Infected.
1	47	44	3
2	48	46	2
3	72	62	10
4	60	56	4
5	226	210	16
6	192	179	13
7	100	96	4
8	81	80	1
9	95	94	1

10.....	93.....	89.....	4
11.....	98.....	90.....	8
12.....	300.....	275.....	25
13.....	201.....	188.....	13
14.....	192.....	187.....	5
15.....	200.....	184.....	16
16.....	257.....	252.....	5
17.....	238.....	225.....	13
18.....	163.....	154.....	9
*19.....	26.....	25.....	1
†20.....	12.....	11.....	1
	2,701	2,547	154

Percentage, 1 in 1,754.

TETANIC SYMPTOMS IN INFLUENZA.

By F. H. Parsons, D.V.S.

If it is not going too far back into the past, I should like to call the attention of the readers of the Review to a form of influenza, if it *is* influenza, of which I had seven cases in the two months ending December 31st, but of which I can find no mention in any of my books.

I describe one case, which is a type of all the rest:

On Nov. 30 was called to see a seven-year-old bay carriage mare, belonging to a gentleman of Poughkeepsie, which, I was told, had a slight attack of "this distemper that's goin' 'round" about a month before, but from which she quickly recovered with no treatment, and had been regularly driven ever since. On Nov. 29 she had not appeared as well as usual, but was driven; in the evening refused her feed; same next morning.

I found the animal so debilitated as scarcely to be able to stand. Pulse 92; temperature 106⅘; no swelling of limbs or about eyes; no discharge either from eyes or nostrils then or afterward, but I immediately noticed well marked tetanic symp-

* Vermont hogs.

† Hogs killed for owners near Boston.

toms, protrusion of membrana nictitans, cocking of tail, etc. The jaws were also set so that it was only with the greatest difficulty I could administer a ball.

Not knowing exactly what to do I prescribed T. E. Physostigma, gttx, spts. vini., recti., ℥iv, every two hours. Next morning tetanic symptoms had almost entirely disappeared, and the mare made a good recovery under ordinary hygienic and stimulating treatment.

The other cases were almost precisely like the above, and all made speedy recoveries.

OPIUM POISONING IN THE HORSE.

By M. T. Treacy, M.R.C.V.S.

The following interesting case recently occurred, and, not having seen any similar ones recorded, I venture to enclose it for publication:

On my arrival at my office, (having been absent all day), on the evening of January 2d, I was requested to attend at a stable, where, the messenger said, a horse had gone crazy. I found my patient, a fine six-years-old bay gelding, about 1,200 pounds, in a loose box, with his head pressed forcibly against the wall, his limbs describing automaton movements, as if walking, his ears erected on the slightest sound, body covered with sweat; pulse 70, soft and full; respiration 78; temperature 101; caloric of extremeties good; pupils much dilated. Occasionally the nose would be extended upward against the wall as far as he could reach, and remain in that position for one or two minutes, the disposition to go forward so well marked, that in the treatment, when active exercise was ordered, it took two men on each side to restrain his movements to a quick walk, and he couldn't be made to stop, unless by allowing him to rest his head against a solid body. He was mean in disposition and ugly to approach.

History.—Been treated for intermittent colic all day in my absence and had received eight or ten drenches, the contents of which I could not learn.

DIAGNOSIS.—Opium poisoning.

TREATMENT.—Ice to the poll, small doses of whisky, ether, ammonia or gin every hour, large doses of coffee, thirty minutes' exercise in every hour in the cold air, a liberal supply of cold water, of which he partook freely. All these symptoms became more aggravated up to midnight, when he fairly trotted a four minute gait, with his head so forcibly pressed against the stall as to threaten its destruction. Hoping against hope, I continued the above treatment all night, and in the morning had my patient convalescent, with the exception of nausea next day. He appeared none the worse, and went to work twenty-four hours after recovery.

CHRONIC INFLAMMATION OF THE STOMACH.

BY R. B. CORCORAN, V.S.

[The following is sent to us through the kindness of the Quartermaster-General at Washington, Gen. Meigs, for which our sincere thanks are respectfully tendered.—ED.]

FORT WALLA WALLA, W. T.,
December 31, 1881.

To the Quartermaster General :

SIR.—I have the honor to report a case of chronic inflammation of the stomach that might be interesting. Was called to attend a mule in Q. M. Dep't, showing symptoms of colic. On examination I pronounced it ruptured stomach, as all symptoms accompanying such were present; attempts at vomition being continuous, sometimes succeeding in discharging flakes of mucous membrane from stomach. I kept the animal under the influence of opiates for a few hours, when it died.

On post-mortem examination I found abdominal cavity partly filled with bloody serum. The smaller intestines showed symptoms of recent acute inflammation. The lungs were congested and showed previous attacks of pneumonia; in the left ventricle of heart found a large fibrous clot, almost filling the cavity. On

opening the stomach it was empty, with the exception of some oil (administered previous to my being called), and a piece of hoop-iron much corroded, about one inch long and half inch wide. At the pyloric extremity the bilious coat had sloughed considerably, and portion of the wall was much blackened. I therefore concluded that the piece of iron had, by continued irritation, caused chronic inflammation, from which the animal died.

A VISIT TO BARNUM'S WINTER HEADQUARTERS.

BIRTH OF THE BABY ELEPHANT.

By M. Bunker, B.S., D.V.S.

It is not the good fortune of all the readers of your paper to be able to see Barnum's late arrival, nor to glean all the facts which one can, who has had the chance to spend an afternoon at the winter quarters of the great American showman, and have a quiet talk with those in charge of the animals.

I had the good fortune to make a trip to the winter quarters a short time after the advent of the second baby elephant into the world, and while there I gained some information which I hope you may think worthy of a place in your Review.

The babe was born at 8 P. M., February 2.

About three o'clock that afternoon the keepers noticed the appearance of a secretion in the mammary glands, which at that time was watery in character. About six P. M. the Queen was noticed to have some little labor pains. They were, however, slight in character, and not very frequent, not interfering with her appetite, as she fed up to the time of delivery.

About eight she lay down on her hind parts, and in this position the little stranger was delivered, the actual time of delivery being only about ten minutes.

As the fœtus passed through the pelvis and over the ischial border, its form was distinctly outlined, and it was so high up that to Mr. Arstingstall it seemed as if it were coming through the rectum. Such was not the case.

As soon as the babe in the membranes was expelled from the vagina, the mother, by rubbing her hind legs, tore the umbilical cord; then, with a blow from one of her front feet, she ruptured the envelopes. After she did this, she got down on her knees and with her head at the junction of the trunk, rolled her baby out of the membranes. Rising, she placed her fore foot upon the chest of the little one, and with one or two gentle pressures started respiration in the babe.

The little one, two hours after birth, weighed 145 lbs., and is about two-thirds of the size of Columbia, born last year. The little one is of a light mouse color, with a pinkish hue around the eyes, and is bright, active and full of play. The period of gestation in the elephant has always been given as two years, but here are two cases which show the period to be about twenty months, Hebe carrying her young twenty months and twenty days, Queen carrying her young a few days less than twenty months; the time in both cases being reckoned from the last copulation. In both instances the male was allowed access to the female six or eight times during a period of six weeks, whenever she would receive him.

At the time of visit, four days after delivery, the mother and babe were doing finely. The secretion of milk was becoming more in quantity and better in quality. It was of the color of cow's milk, but much sweeter-tasting, like that of a cocoanut. The amount of secretion was about that of a good cow.

The mammæ are situated in the pectoral region, and occupy the same relative position as do those of the human family, the nipples, however, extending at an angle of 45° behind the fore leg. One nipple has eleven issues and the other thirteen.

The young elephant, contrary to the general opinion, grasps the nipple with his mouth, rolling his trunk back over his forehead.

I had hoped to be able to give you a full account of the placenta, as I expected to see it in this city, but it has not come as yet. I will, however, say that I found there were five cotylidons, each about six inches in diameter, an umbilical cord between two and three feet in length, and having three arteries and three veins.

AMERICAN VETERINARY COLLEGE HOSPITAL.

REPORTS OF CASES.

By R. H. Harrison, D.V.S. House Surgeon.

CANINE PATHOLOGY. RABIES CANINÆ.

Four well-marked cases of rabies have been admitted and died in the hospital during the summer. The symptoms and post-mortem examinations of each case were well marked.

Case No. 1—Was a half-breed dog—a cross between a bull-dog and a mastiff. About a year ago he was under treatment for a gun-shot wound of the head. When requested to see him he had been ailing for two days, lying in the back of his cage, refusing food, solid or liquid, with his mouth open and abundant saliva running from it; the tongue of a dirty color, and, at the time of visiting, was partly paralyzed behind. There was no doubt as to the nature of the disease; diagnosis made accordingly, and, as he was well secured, he was left alone to his fate. He died the following night, and his body was brought to the college for post-mortem. This revealed the brain congested, with effusion into the lateral ventricles; the plexus choroides were hyperæmic; the brain was softer than normal, and its membranes were injected; the lips and tongue were excoriated and of a leaden hue, and were covered with particles of straw and lime; the fauces were but slightly congested; the trachea was filled with frothy mucus, and the lungs were engorged with blood and almost black; the heart was flabby and contained a little fluid blood, blackish-red in appearance; the stomach was shrunken and contained two ounces of coffee-colored fluid; its mucous membrane showed patches of congestion; the spleen was enlarged slightly by engorgement; the kidneys were softer and deeper in color than normal, and the bladder was closely retracted within the pelvic cavity; the whole of the intestinal tract was empty and rather yellowish. The bullet, which could not be extracted at the time he was shot, was found imbedded in the muscles of the larynx.

Cases No. 2–3.—Were two bull-terriers, a bitch and a dog.

Both belonged to the same party, and were affected a week after the other. The bitch was first brought to us partially paralyzed in the hind extremities, which gave rise to a staggering gait. It was reported that she had not been her usual lively self for a few days, and a day before she was brought to us, could neither eat nor drink. She had paralysis of the muscles of the lower jaw, which kept her mouth open, with a profuse flow of saliva; the buccal cavity and the tongue were dark red in color; the eyes were dull and squinting, there being slight opacity of the cornea; the countenance was expressionless, save wrinkled eyebrows, which gave her a hideous look. She was placed in a kennel by herself, and remained quiet, curled up in a corner under the straw. The next morning she was evidently worse, the paralysis having increased to such an extent that she could scarcely stand. Eighteen hours afterwards she died without a struggle. Autopsy showed well-marked lesions: the meninges of the brain were highly injected, with effusion between them; the brain was softened and but slightly congested; the mucous membrane of the tongue and the buccal cavity were of a brownish-red color; the pharynx was highly inflamed; the air passages were highly congested throughout, and the lungs engorged with blood; the heart was empty; the stomach contained a little dark fluid, and its mucous membrane showed two patches of congestion; the upper portion of the intestines were empty, while the small colon was filled with liquid fæces; the kidneys were softened and somewhat fatty; the bladder was closely retracted within the pelvis; the spleen was enlarged to twice its natural size, and was blackish-green in color.

The dog was, for precaution, chained up, and the owner was to report any change that showed itself. For three days nothing was observed that was in any way suspicious; on the fourth day the dog became moody and sad, refused his food, and hid himself under his straw bedding. The next morning, on pushing him from his hiding-place, he was noticed to stagger a little, and was immediately sent here; the man that brought him said he was worse when he arrived than when he started. He presented symptoms identical with the bitch, and died twelve hours after being

admitted. Post-mortem examination revealed similar lesions as were found in the bitch, with the exception of less congestion of the meninges.

Case No. 4.—This subject was a Skye terrier, a great pet of several ladies. Naturally affectionate, he had, however, a certain hatred for some persons, and was cautious of new acquaintances. He was noticed first becoming exceedingly restless, constantly moving, especially at night, and showed an *insatiable* desire to lick. He begged to be taken up and, if gratified, would lick the hand until driven away. Dr. Liautard was requested to see him. As he came to the house, the dog, who had not been over friendly with him, ran to the doctor and begged to be taken up, to go upstairs. The gentleman did so and, in going up, noticed the great desire of the little fellow to lick. This was the only peculiarity which could be found. He seemed to be entirely well otherwise, and ate and drank comparatively well. He was said to have been bitten two months ago, while in the country, but the dog which bit him is said to be alive and well! And while the suspicion of rabies might have been entertained, there was scarcely enough in the history to sustain it; but it was strengthened, however, by a peculiar circumstance: As Dr. L. was going to leave the house, without provocation the dog flew at his heels and tried to bite him. The case was then more evident, and the dog was removed to the hospital. He was placed in a cage, near other dogs, and closely watched. His first action was to hunt over his bedding, and eat considerable straw; then, as if startled, would prick up his ears and listen. His eyes were bright, and had a peculiar far away look at times. An active cathartic was administered, and he was left quietly alone. At the usual afternoon feeding he seemed greatly excited by the barking of the other dogs, and began to gnaw at the woodwork of his cage; later in the evening, approaching him as silently as possible, he was seen sitting on his haunches, intently watching something in the straw. When spoken to he would look up as though he only partially heard you, and would again resume his watching. Irritating him with a stick thrust into his cage, he would snap at it very viciously, until he was in a perfect fury. His cries at this time were taken

particular note of, so as to be able to detect any change in voice. The next morning he was somewhat exhausted, having gnawed all the woodwork of his cage, and scratched the wire netting until his paws were bleeding; when irritated, was more violent than before, and showed a characteristic change in his voice. About noon he was purging very freely, and, at the slightest irritation, he would have a paroxysm of rage. Other dogs placed before him would only add fury to his madness, while they themselves would shrink away terrified. Towards evening he became exhausted and kept quiet during the night; the next morning he was paralyzed, and died at eight o'clock in the evening.

On post-mortem examination, the brain and superior part of the spinal cord were inflamed; the brain substance was softened; the conjunctiva was highly injected, as well as the vessels of the cornea; the fauces and buccal cavity were of a normal color, although the tongue was blacker than usual; the lungs were engorged, and the trachea was filled with frothy mucus; the heart was flabby, and contained semi-fluid blood, blackish in color; the stomach was distended and impacted with straw, bits of wood, carpet tacks, pieces of string and buttons—altogether they weighed four ounces; the mucous lining was erroded and inflamed; the liver and spleen were both enlarged and engorged; the intestines contained fluid fæces mixed with straw and wood; the kidneys were slightly darker than normal; the bladder, as in the other cases, was closely retracted.

RUPTURE OF THE BLADDER IN A MASTIFF.

A large English mastiff was brought to us for autopsy. The history of the case is quite interesting, and probably gives a correct idea of the cause of the lesion. The dog had been brought from the country to cover a bitch, but when he arrived it was found that she was not yet in desire, so he was withheld from her. Being chained up, he became very uneasy, and spent the day in trying to break loose. The next morning he was found free, having broken his chain during the night, and had evidently

tried to have connection with the bitch. During the day he made frequent attempts to copulate with her, but was each time repulsed. It was noticed at his last attempt that he suddenly fell, and lay cold and trembling. Nothing was thought of this at the time, and he was put at once on a bed of straw and left for the night; the following morning he was found dead. Autopsy revealed the peritoneal cavity filled with fluid, which was found to consist principally of urine; the bladder was relaxed and intensely congested, and showed a rent on its interior surface, near the fundus, an inch and a quarter long; the lower portion of the small colon and the rectum were impacted with hardened fœcal matter, and there was also well marked symptoms of peritonitis.

Is not the probable explanation of this lesion the fact, that at the time of copulation, having a full bladder and impacted rectum, the violent exertion and venereal excitement were sufficient to cause the rupture of the walls of the viscus?

VESICAL AND URINARY CALCULI IN AN OLD DOG.

On the afternoon of the 14th of December, an old dog, blind, and weighing about forty pounds, was brought to the clinic, with the following history: For the past few days he had constantly been trying to pass his urine, straining violently at each attempt, but failed in micturating or passing any fæces; his belly had begun to swell and gradually grown larger. About a year ago it was reported he had a similar attack, and was said to be promptly relieved by the use of sweet spirits of nitre. The animal lay prostrate on the floor in a comatose condition. The abdomen was distended and presented a large tumor, smooth, placed more towards the right side of the abdomen when the animal was made to stand up, movable from side to side; this enlargement was hard and tense, resembling in general appearance and feeling a large fibrous growth. Taking into consideration the condition of the patient, his age, his infirmities, the owner was advised to have him destroyed, which was complied with—chloroformization.

Post-Mortem.—Making an incision along the median line,

from the pubes to the sternum, the bladder protruded, distended to its fullest capacity, the size of a man's head. The bladder and the urethra were then removed entire, and six pints of urine slightly decomposed and dark colored were evacuated by a canula. Opening the bladder, a large number of calculi were found, varying in size from a large pea to minute particles. The canal of the urethra was literally packed with calculi, especially in its bony portion; the walls of the bladder were hypertrophied, and the mucous membrane was slightly congested; the kidneys were enlarged and softened, a small quantity of urine was present in the hilus of each; one calculus, the size of a pin's head, was found in the pelvis of the right kidney, and two, not quite so large, were in the left. The urethral tract was highly inflamed throughout; the prostrate gland was enlarged and diseased, also the spleen showed deposits; the calculi, which numbered over four hundred, were composed principally of the triple-phosphates. The other organs were healthy. A report of the microscopic examination of the diseased structures will be given in another article.

MALIGNANT PURPURA HEMORRHAGICA.

By M. Bunker, B.S., D.V.S., House Surgeon to A. V. C. Hospital.

The case which I wish to report for the Review is neither an uncommon one nor was the treatment especially new, yet the results were so satisfactory that I think it worthy of a place in the Review.

November 29, 1881, I was called to see a chestnut gelding which had been suddenly taken ill, and was apparently suffering very much, having some epistoxis. Pulse, 60; temperature, 105. The following history was obtained:

The horse some two or three weeks previous had had a slight attack of pulmonary congestion, from which he speedily recovered and resumed his work in about a week, eating well and apparently in good condition.

About eleven o'clock in the forenoon of the day I saw him he

was noticed to be breathing fast and stertorous, with a bloody discharge from the nostrils, and getting up and down as if he had colic; when I saw him I found him in a recumbent position. An examination of his nostrils showed petechial spots. A diagnosis of purpura hemorrhagica was made and the animal sent to the hospital. When admitted, he was very weak, legs, head and nostrils somewhat swollen, and with difficulty was taken to the stable and put in a box stall.

He was immediately placed under the administration of a strong decoction of coffee combined with strychnia. The dose given was coffee ℥ vi., strychnia in solution, grs. ss., every hour. This treatment to be kept up night and day. November 30, the temperature has come down to 103, and the pulse to 60. The same treatment is continued.

December 1.—Temperature, 102; pulse still remains at 60; during the past night some slight symptoms, due to the exhibition of the strychnia, have been noticed in the shape of slight muscular contractions and tetanic spasms. The administration of strychnia is stopped for about four hours and then resumed. Up to this time the horse has not had much appetite, but is now beginning to eat oats and hay very well. The swellings of the extremities are not very large, being almost entirely on the hind legs, and more on the left than on the right; nose about the same. The discharge from the nose still continues. At night the administration of medicine was changed to every two hours. The animal eats better.

December 2.—Temperature, 101; pulse, 60; same general condition of the swellings. Medicine is given every four hours.

December 3.—Temperature, 100⅘; pulse, 48. The animal is eating well; the swelling of the nose is about the same; discharge quite profuse and with it some pieces of the mucous coat of the Schneiderian membrane came away when the crusts are removed. The nasal douche is applied, and an application of glycerine made to the membrane.

The swelling of the legs seems to be diminishing, but all over the hind legs from the lower third of the metatarsi to the hoof there appear little spots which give to the white stocking an ap-

pearance similar to that presented by a firing with points. The medicine is now given every six hours, but the strychnia has been increased to grain doses.

December 4.—Temperature, 100⅘°; pulse, 48; animal is generally better. Medicine is given every six hours.

December 5.—Temperature, 101; pulse, 42. The administration of coffee is stopped, and mineral tonics, in the form of sulphate of iron, combined with grain doses of strychnia, are given. The animal now eats from six to eight quarts of oats per day.

December 6.—The temperature and the pulse are normal, but the discharge from the nose is still considerable, so that when cleaned, large crusts, 2½ inches in length and ½ inch thick, are removed from the septum nasi.

The legs are about the same, but the spots which have been showing themselves around the fetlock and on the posterior face of the phalanges, show a tendency to run together and slough, so the leg is bathed with warm water and a poultice applied to them, to hasten the process.

December 7.—During the night the horse had little colicy pains, probaly due to overfeeding, so that spirits are administered as required; alcoholic, mineral, vegetable and nervous tonics are given.

There have been sloughs from both heels, much larger on the near than the off; these are dressed with carbolic spray and granulation stimulated; the nose is kept clean.

December 8.—There has been a rise of temperature to 102, pulse, 40; this may be considered as a result due to the sickness of yesterday. It being hard to keep the nose clean, fumigation is resorted to as a means of loosening the scabs. The same medicinal treatment is kept up until December 12, when drachm doses of sulph. iron and iodide of potash and one grain of strychnia are given three times a day.

The surfaces upon the septum nasi are now granulating nicely, and are kept down by the application of nitrate of silver in the stick.

The spots upon the hind legs are dressed antiseptically, and the edges cauterized twice a day.

He is now eating nine quarts of oats per day, with full ration of hay.

December 30.—Is sent out-doors for exercise; the wounds have healed so nicely that they have been dressed but once a day, and from this date are only dressed every other day.

The horse is exercised every day until January 18, when he is sent home with directions to be brought back about twice a week for dressing.

February 18.—The horse is brought back for dressing, and there being only a very small spot still unhealed he is discharged, some dressing powder being given to the coachman, with directions to put him to work in a week.

At one time there seemed to be danger of perforation of the septum nasi, which would cause the animal to roar and render him worthless to his owner. This danger has all subsided and the animal at present breathes perfectly.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The sixty-seventh regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College, Tuesday, February 14, 1882, at 8 o'clock P. M., with the President in the chair.

The following members responded to the roll call:—Drs. Liautard, Lockhart, L. McLean, Foote, Duane, Bunker, Harrison, Fields, and R. McLean. The minutes of the previous meeting were read and adopted. Dr. Crane was proposed for membership. A motion that his name be subjected to the action of a committee appointed by the President, was carried, upon which Drs. Coates and Bunker were authorized to serve, and report at the next meeting.

Dr. Bunker followed with a paper on anorexia, in which he stated that "technically speaking, the condition or result of conditions, anorexia does not exist as a pathological condition by itself, yet at times it does assume such phases, and shows such

pertinacity as to almost baffle the efforts of the practitioner to relieve the condition." The causes of anorexia he divided into "the exciting" and "the mechanical," among the former mentioning disease, over-feeding, poor feed, poor hygienic conditions and over-exertion. For treatment, he advised the removing, if possible, of the promoting cause, whether it be pathological, physical or mechanical, and then, by the aid of medicinal remedies in the shape of tonics, stimulants, alteratives, etc., build up the system and restore its normal tone. He also referred to the value in these cases of change of stable and surroundings, and the change of feed, which are often sufficient to entirely overcome the trouble.

The paper came to a close with reports of several cases of anorexia from various causes, which had came under the writer's observation at the American Veterinary Hospital.

An interesting discussion followed as to the cause in cases of anorexia where the animal's vigor was unimpaired, though failing in condition.

Dr. Lockhart cited cases in which the diagnosis of acidity of the stomach as a cause proved correct, as the treatment by alkalies relieved the complaint. He recommended the use of carbonate of potassa in these cases. Dr. Foote considered that anorexia in the horse might arise from the same cause that so often produces it in the human being, a functional inactivity of the secretory glands, or of the intestinal tract, especially the liver. He recommended a trial of podophyllum combined with belladonna, nux vomica or other remedies as indicated for this condition. The questions arose, could torpidity of the liver in the horse be diagnosed, and is podophyllum of any value as a veterinary remedy, but no satisfactory conclusions were arrived at for either. Dr. Liautard spoke of that class of cases of anorexia in which the loss of appetite seems to be remittent. He considered the cause in such cases to be a neurotic condition of the digestive apparatus, and advised, as treatment, the use of narcoties. Dr. Liautard presented a specimen sent to him by Dr. McInnes, of Charleston. The only history accompanying this was, that a horse was affected with loss of appetite; a cathartic was adminis-

tered, and the animal died the next morning. The specimen was taken from one of the heart cavities, which one not being stated, and appeared to be a large anti-mortem fibrinous clot. Further history of the case is to be elicited and the specimen is to be subjected to a pathological examination.

A motion that the matter of obtaining a State charter be laid on the table was carried.

A vote of thanks was tendered the essayist.

Dr. Liautard volunteered to read an essay at the next meeting of the Society.

Motion to adjourn was then carried.

W. H. Foote, M.D., V.S., *Sec.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular fortnightly meeting of this Association was held in the lecture room of the Veterinary College on Thursday evening, January 19th, Mr. M. C. Baker, V.S., in the chair. After preliminary business, Mr. Joseph Skally, Boston, read a communication in which he described a case of perpura hemorrhagica treated by himself. The treatment consisted of generous diet and repeated doses of chlorate of potash. The animal recovered perfectly under his treatment. The case elicited considerable discussion among the members. Mr. Paul Paquin described an interesting case of a monster calf which came under his notice last summer, which consisted of a fleshy mass resembling a mole. Mr. Donald Campbell, St. Hilaire, then read a most interesting paper on the "History and Breeding of the Horse." He went very fullly into the history of the different breeds of animals now in use for domestic and other purposes, and described the points in form, color, age, etc., to be observed in the selection of stallions and mares for breeding purposes. For speed and endurance what is wanted is bone, muscle and high-spirited, nervous horses; while for draught, the more phlegmatic, heavy and quiet breeds are those best suited. He considered the Clyde, crossed with our Canadian mares, were the best suited for Canadian climate, and the half-bred horse was best as a general pur-

pose horse. An interesting discussion followed, in which some of the members considered that the Percheron Norman horse was superior to the Clyde as a draught horse. After votes of thanks had been passed to the readers of the papers, the meeting adjourned.

At the next meeting Prof. Osler and Mr. A. W. Clements will give the results of some experiments they have been conducting with regard to the life history of the *Tænia medio canulatas*, and Mr. C. B. Robinson will read a paper on "Septicæmia."

The regular fortnightly meeting of this Association was held in the lecture room of the Montreal Veterinary College, on Thurs day evening, February 2d, the second Vice-President, Dr. Wm. McEachran, in the chair.

Mr. C. B. Robinson read an essay upon "Septicæmia," giving a full description of that interesting disease, and the best means to be adopted for its prevention and cure. It was listened to with marked attention throughout, and, at its close, a lively discussion ensued.

Prof. Wm. Osler then read an account of an experiment recently conducted by himself, with the assistance of Mr. Clement, at the Veterinary College, in which fifty segments of the *Sænia* mediocanellata, or common tape-worm of this country, had been fed to a calf three days old. Accurate observations of the temperature and pulse of the animal were taken daily for seven weeks, at the end of which time the symptoms indicated that the parasites had entered upon the cystic stage, or were "measled." The calf being slaughtered, the post mortem revealed the presence of the entozoa in various parts of the body, but particularly in the voluntary muscles, where they appeared as little translucent cysts, about one-eighth of an inch long, with an opaque spot in the centre, which was the parasite or "measle." Specimens of the muscles containing the cysts were exhibited, and the speaker referred to the curious fact that although the tape-worm derived from measly veal was far more common in this country than that derived from measly pork, yet measly veal was rarely if ever de-

tected unless, as in this case, from experiment, while measly pork was comparatively of frequent occurrence. He thought this was probably owing to the greater transparency of the cysts in veal than those in pork and their consequent liability to be overlooked. Tape-worm is an entirely preventible disease, and it is a disgrace to the community that what could be entirely eradicated by proper hygienic measures should be as common as it is. He hoped that a systematic inspection, such as could now be carried out at the abattoirs, would do much to decrease the number of cases of this common malady. In answer to a query by Prof. D. McEachran, Prof. Osler stated that there were probably four or five hundred cases of tape-worm in the city of Montreal, and that nearly every medical man in the city had one or more cases under treatment. Mr. McEachran, after complimenting Prof. Osler on the value of this scientific investigation, as one bearing very strongly on public health, and apart from the value of such investigations to the students of both human and veterinary medicine, he had no doubt it would have a beneficial effect in demonstrating the actual necessity for proper scientific inspection of the meat supply. We have just heard that measly pork is often detected, whereas measly veal or beef was rarely discovered. Yet we are informed by Prof. Osler that the tape-worms produced from beef measles constituted nearly all the cases in the city, proving very clearly to his mind that measles in beef was far more common than in pork, and the fact of these not being found as often was due to the want of inspection, as explained by Dr. Osler, and, as they could see for themselves by the specimens of which both had been shown them, while pork measle was opaque, white, and easily seen, beef measle was smaller, transparent, except its centre, hence not so easily discovered by cursory observation. He described the symptoms produced by tape-worm as being dreadful, leading to great despondency, mental disturbance and all the horrors of the most aggravated dyspepsia. He congratulated the members of the Association on being privileged to listen to such a scientific paper on such an important subject as that just delivered in their hearing. After a few complimentary remarks by the Rev. Mr. Killigan and others, a cordial vote of thanks was

tendered to Dr. Osler and Mr. Clement, and also to Mr. Robinson, for their instructive papers.—*Gazette*, (Montreal.)

U. S. VETERINARY MEDICAL ASSOCIATION.

The regular semi-annual meeting of the United States Veterinary Medical Association will be held at Young's Hotel, Boston, on Tuesday, March 21st, at 11 A. M.

The Comitia Minora meets at 10 A. M.

C. B. MICHENER, *Sec.*

ALUMNI ASSOCIATION OF THE AMERICAN VETERINARY COLLEGE.

The Alumni meeting of the American Veterinary College will be held in the lecture room of A. V. C., Monday, March 6, at 10 A. M.

JAS. D. HOPKINS, *Sec.*

CORRESPONDENCE.

THE OPERATION FOR CARTILAGINOUS QUITTOR.

Editor of the American Veterinary Review:

DEAR SIR.—As during the last few months I have seen the operation for cartilaginous quittor and the after treatment almost daily, my attention was specially called to your note in the November number of the REVIEW, and to Dr. Bryden's letter in the January number which I received to-day.

A few data may be of interest to him and to others.

Probably nowhere is "the operation for cartilaginous quittor" (the modified operation of Renault) so often performed to-day as it now is at your old *alma mater* at Alfort. Here, because the horses come as a last resort after the failure of other treatment; and if the disease has not made such ravages as to render all treatment hopeless, they are returned to work, at a walk, in six weeks, and can trot in three months.

The general rules for treatment here are:

1st.—When the quittor has only attacked the posterior portion of the cartilage, employ caustics, preferably the liquor villate, rarely the hot iron, as its effects upon the sound tissues cannot be properly governed.

2d.—Should one to two months of this treatment fail, or should the quittor advance toward the anterior part of the cartilage, then operate without delay and extirpate the cartilage thoroughly.

The wall not only should be pared to a thin pelicle over the laminæ, but also the sole and bar corresponding to the quittor.

After the operation the dressing is *not removed* for ten to fourteen days, unless the thermometer indicates a temperature above 102° F., after that it is renewed every few days.

Clear as the operation is, it can be easily understood that it should only be attempted by one thoroughly cognizant of his anatomy; and of equal importance is the after dressing, which should firmly adapt the parts in position.

Very respectfully yours,

RUSH S. HUIDEKOPER, M.D.

THE OPERATION FOR CARTILAGINOUS QUITTOR.

DEAR MR. EDITOR.—The prompt response from Dr. Coates to my remarks on quittor interested me very much, although at the same time it occasioned me some surprise. I had no idea that the term quittor was used in such a general way, and consequently did not intend to be understood as claiming that sinuses of the coronet, the results of wounds, treads, pricks, or even what some call suppurating corns, would require six or eight months to get well in.

True quittor, as I regard it, needs no such accidents to produce it, neither could its development be influenced by such recent injuries, excepting in a foot predisposed to the disease. The foot subject to quittor may never have received any external injury; it is a strong walled, deep soled hoof, hard round the coronet, often badly contracted at the quarters, the hoof corroding and injuring the rings of the bone and adjacent tissue;

the animal goes lame, there is swelling over the affected quarter with pain on pressure; in time the swelling opens, pus and matter escapes, and a true quittor is established.

An important matter to be determined seems to be whether the lesion is in the cartilage or in the coffin bone. If amputation of the cartilage will accomplish a cure within six or eight weeks from the opening of the sinus or swelling, it would certainly go far towards proving the cartilage to be the obnoxious element, and its condition the cause of the sinus and discharge.

On examining authorities, it will be found that they differ as to what constitutes true quittor.

Prof. Dick calls it "whitlow, pipes or quittor, the result of pricks from nails, etc."

Prof. Williams calls it "*A fistulous wound on any part of the coronet*, generally caused by treads, pricks in shoeing, suppurating corns or any other injury calculated to excite the suppurative action within the hoof or in the structure of the coronet."

Prof. Gamgee says "The accepted definition of quittor does not meet the case, according to our understanding of the matter, in so far as it is regarded and described as consisting of a discharge of matter from the coronet, which has been formed within the cavity of the hoof, caused by some injury, and which, so pent up and finding no means of exit below, burrows its way to the top, sinuses being established for its passage." "The above, which gives the common acceptation of what a quittor is supposed to be, is, to say the least, a vague account, but it is more than that, it is incorrect." "We may have any number of cases of matter escaping from the coronet without the semblance of quittor, according to our views and experience on the subject, and we think it important to be plain in the matter, because right and wrong notions lend to widely different courses of practice, not only when the existence of quittor is agreed on, but under less complicated diseased conditions of the foot." He continues as follows: "The fact appears to us to be that quittor is a state consequent on a deep seated lesion of the foot, in which the cartilages or frequently even the coffin bone is affected at its posterior ex-

tremity, indicated by the seat of the disease." And again: "A quittor is a sign of a complication of long standing disease of the foot, or of some serious lesion, such as the fracture of some part of the coffin bone, or an ossified cartilage, all of which pathological conditions we have found."

It is certainly very interesting to me, as Dr. Coates suggests, to know that this operation can be relied on. Although the cases given may not be altogether free from objection, yet it would be very unreasonable of me to doubt the merit of the operation and its uniform success when indorsed by those so capable of judging. I hope you will pardon me for troubling you with such long letters. Thanking you for the interest shown in the subject, I remain, Yours very respectfully,

WM. BRYDEN.

THE OPERATION FOR CARTILAGINOUS QUITTOR.

Dear Mr. Editor:

In the November number I had the pleasure of reporting a case where the lateral cartilage of the foot was removed for cartilaginous quittor.

In the December number, Dr. Bryden, of Boston, has a letter criticising the operation in a very friendly manner, and at the same time asking for information in regard to the advisability of the same; also asking for reports from other members as to their success in operating thus.

Dr. Coates, in the February number, cites five cases, all of them acute or recent cases, in which the operation was perfectly successful.

Now, as to the case which I reported, it is true, the animal had had a disease of the cartilage for over six months, but the Doctor has misunderstood me, I did not say that the horse had been *under treatment six months*; the history of the case extended back six months from the time he was seen by any of the staff of the hospital. He was first seen by any one at the hospital, September 9th and last seen October 22d, making forty-three days in all during which the animal was under our observation. It

certainly seems to me, that if by an operation a horse with a quittor can resume his work in from six to eight weeks, it makes no difference whether the case be old or recent, the indications are to operate.

Why operate? first, to relieve the trouble, then to stop expense, and finally to relieve the horse from constant pain.

Dr. Coates cites four of his cases as in draught horses. He operates and in eight weeks has his patients all at work, free from lameness and as good as ever. The matter of expense also enters into the question. If an owner has a horse with quittor he desires to get the horse back to his normal condition for work as soon as he can, and if the surgeon can by an operation have the horse resume his work in, say, two months, is it not better to operate and put the horse back to his work than to poultice and poultice or turn out, and at the end of six months be no nearer the end of treatment than when he began? An owner with a horse laid up has either to buy or hire. If he is going to lay up his horse for six months he buys; if for six weeks he can afford to hire, and thus save himself the expense of keeping two horses and only having the use of one, or having a horse with no work for him to do. The question will be asked, would you operate in every instance? Certainly not, but only in those cases where the indications are that a large portion of the cartilage is diseased, where the tracts are extended and where the chances are that the other tissues may become involved.

Is it a painful operation? There is no doubt it is painful, but it is an operation which when well done does not require a very great length of time, and the animal's sensibility can be deadened either by the use of chloral or some other of the anæsthetics.

It leaves only a simple wound to be cleansed, heals readily and, as far as the horse is concerned, does not interfere at all with his future usefulness.

There is in the hospital at present a trotting mare which some six weeks ago had a suppurative corn involving the cartilage. She was treated outside by one of the profession, but about a week ago was sent to the hospital. She was operated on and at the time of going to press is doing well.

There is also another case in the hospital with another quittor to be operated on, and I hope to be able to report them for the REVIEW in some future issue.

I have information from three other members of the profession who have operated for quittor, and they report their cases to have recovered in from four to six weeks. I hope that any of the readers of the REVIEW who have had experience with this operation will report the case for publication.

M. BUNKER, B.S., D.V.S.

OPERATION FOR CARTILAGINOUS QUITTOR.

Editor American Veterinary Review:

Dr. Bryden furnishes a criticism to one of your late issues, on the above named subject. I confess it difficult to understand exactly why he criticises the operation. He admits never having performed it, and I infer from his article that he never saw it performed, and that he is unacquainted with the object for which the operation has been adopted. He "hopes the operation may prove as successful on a quittor just forming as one 'over six months' old!" Indeed! Why not remove all the cartilages as a preventive measure against cartilaginous quittor? I suppose on the same principle we should treat pleurisy by puncturing the thorax at the onset on the disease, so that if hydro thorax does take place there will be a hole in it ready for drainage. What is the use in waiting until there is water in the chest? If puncturing dosen't cure the pleurisy when "just forming," operating when there is water there may be "only another of the ingenious tortures to which the profession so often subjects its poor patients." The profession in my neighborhood doesn't remove cartilages *before they are diseased.* Neither do they treat cases of quittor "*six or eight months from the first opening of the sinus.*" They don't adopt that kind of treatment, for it is not considered either humane or least expensive.

Yours, &c.,

L. L.

NOTICE.

DEMONSTRATOR OF ANATOMY TO THE AMERICAN VETERINARY COLLEGE.

The position of Demonstrator of Anatomy in the faculty of this institution is open to competitive examination. The candidate must be a regular graduate of veterinary medicine and in good standing. The candidate must pass a written and oral examination before a board of examiners appointed by the Board of Trustees of the college, and must deliver a lecture upon anatomical preparations, to be selected by the examiners.

The examination will take place on or about the 1st of May. Applications should be directed to Prof. F. D. Weisse, M.D., Secretary of the Board of Trustees, 51 West Twenty-second street, New York.

HILL'S BOVINE PATHOLOGY.

Wm. R. Jenkins begs to inform the veterinary profession that the delay in the publication of Prof. Hill's new work on Bovine Pathology is due to the difficulty of obtaining satisfactory colored illustrations for the work. The work is entirely written and ready for publication, and when the difficulty concerning the plates is obviated, will be issued at once. Advices from London concerning Prof. Fleming's work are that he has ready about 300 wood-cuts, but that its publication is yet indefinite, owing to the vastness of the subject, which increases as he writes.

Mr. Jenkins has just published the first American edition of Armatage's Veterinarian's Pocket Remembrancer, at a price considerably less than the English edition.

NEWS AND SUNDRIES.

HONORS TO A VETERINARY SURGEON.—Mr. H. Bouley, Member of the Institute (Paris), Inspector-General of the Veterinary Schools (France), has been raised to the rank of Oommander of the Legion of Honor.

VALUE OF CATTLE IN PENNSYLVANIA.—Pennsylvania had last year 851,790 cows, worth $18,625,000; and 674,000 oxen and other cattle, valued at $14,962,000.

CONDEMNED MEAT IN NEW YORK MARKET.—Reports come to the press that the parties who are inspecting and condemning cattle affected with pleuro pneumonia in the vicinity of New York are placing the condemned meat upon the market. We trust this is not true.

NEW YORK DOG SHOW.—The Westminster Kennel Club have again been fortunate to secure the American Institute for their Bench Show, to be given April 18, 19, 20 and 21. All lovers of dogs will be glad to know this, as there is no better place in the world for a show of this kind.—*Turf, Field and Farm, Feb. 3d.*

CANADIAN RESTRICTIONS MODIFIED.—The Canadian Government has given orders to admit the importation of American cattle under quarantine regulations, a course American and Canadian breeders have anxiously desired, in order to allow an interchange of blood between valuable herds.

ANTHRAX IN IOWA.—A number of cattle are dying in Mills County, Iowa, from what is supposed to be anthrax. A farmer named Joseph Boggs skinned one of his cows and threw the carcass to his fattening hogs, and the next morning every hog in the pen was dead, nine in number.—*Minnesota Farmer.*

FREEMARTINS BREEDING.—It is often asserted, and many breeders are positive, that a freemartin cow will not breed. As I have one that has bred, it may be of interest to many of the readers of your valuable paper to know the facts. On the 17th day of January, 1880, Rhodomela dropped freemartins. The bull calf was dropped first, the cow calf immediately after. On the 29th day of April, 1881, we noticed the latter was in heat,

although only fifteen months old. I had her served, as her breeding was so good that I was very anxious to get a calf from her, if possible. The result is very satisfactory, as early this morning she dropped a fine cow calf.—*Cultivator and County Gentleman.*

How Long Horses Can Live Without Food.—Several interesting experiments have recently been made in England to find out how long a horse can live without food, and how little he can live on. It has been proved that a horse can live twenty-five days on nothing but water, and it can live seventeen days without either eating or drinking; it will only live five days on solid food without enough to drink. It follows, therefore, that water constitutes a very important item in the nourishment required by a horse. The fact has been stated that after having been deprived of water for three days a horse has drunk fifty-two litres in three minutes.—*Turf, Field and Farm.*

A Prolific Heifer.—The Jersey Heifer Tina, dropped March 28, 1879, dropped her first calf April 13, 1880, at 1 year and 16 days old; her second calf March 12, 1881, at the age of 1 year, 11 months, and 12 days, and the third calf Jan. 27, 1882, at the age of 2 years, 9 months and 29 days. The last two calves were heifers. She gave the first season, in June, 11 quarts per day, making eight pounds 11 ounces of butter per week. The second year, in June, she gave 27 pounds of milk per day, making 2 pounds ½ ounce of fine quality butter per day. At this date, (Jan. 30, 1882) she is giving 11 quarts per day. She is strong and healthy; live weight about 950 pounds; color dark fawn and white; dam Bessie; g. d. Lilly, from Wm. Redmon's herd, South Orange, N. J.; sire General P.; g. s. Gen. P. Bellinger; imp. Alphea.—*The Cultivator and County Gentleman.*

A Six-Legged Cow.—The butchers in Washington Market were greatly exercised recently about the presence of a live cow on exhibition in their midst with six legs and a vertebræ as crooked as the branch of a sour apple tree. She was brought by a man named Charles Andres all the way from Colorado, where she was picked out of a herd of cattle grazing on the plains, but the herd was in complete ignorance that any one of its number carried six legs, otherwise a mass meeting might have been held

and the innovation of a cow wearing six legs, when other cows were limited to four, vigorously denounced as a monopoly. The cow in question, which was exhibited in a shed at the rear of West Washington Market, was of average size and covered with a suit of somewhat rough, brown hair. The forehead and breast were white and the horns curved forward in crescent shape. Her keeper said her age was six years, that she was gentle, and recognized him whenever he placed his hand upon her. She stood on four legs like any other cows, and the two extra legs growing out of the top of the shoulder blade dropped on either side, and in shape were exactly like a pair of hind legs. The leg on the right side, terminating in an elongated hoof, measured twenty-six inches and was at least twenty inches from the ground. The leg on the left side measured sixteen inches and was about thirty inches from the ground and evidently undeveloped. Looking from the tail of the animal toward the head the spine assumed a zigzag line, and the buttocks were widely separated, while the hips were unusually prominent. She eats bran and hay like any other cow and drinks a pail of water a day. She has fine bright eyes, and the white hair curling over her forehead gives her quite a fashioaable appearance.—*New York Herald.*

EXCHANGES, ETC., RECEIVED.

HOME.—Turf, Field and Farm, Country Gentleman, Proceedings of the Medical Society of the County of Kings, Bulletin of the National Board of Health, N. Y. Weekly Times, Breeders' Gazette, American Cultivator, Medical Record, Prairie Farmer, American Agriculturist, Medical and Surgical Reporter, Ohio Farmer.

FOREIGN.—Recueil de Medecine Veterinaire, Archives Veterinaires, Journal de Zootechnie, Annales de Bruxelles, Veterinarian, Veterinary Journal, Clinica Veterinaria, Revue fur Thierheilkunde und Thierzucht, Revue de Hygiene, &c., &c.,

JOURNALS.—Daily Register (Mobile), Minnesota Farmer, Our Dumb Animals, Nebraska Farmer, College and Clinical Record, Western Medical Reporter, New England Homestead, New York Medical Abstract, &c.

PAMPHLETS AND BOOKS.—The Register of Veterinary Surgeons (London), Medical Progress, Proceedings of the British National Veterinary Congress, Trance and Trancoidal States in the Lower Animals, by G. M. Beard, M. D.

COMMUNICATIONS.—M. T Tracy (Lancaster, Pa.), F. H. Parsons (Poughkepsie, N. Y.), R. B. Corcoran, U. S. A., W. Bryden (Boston, Mass.), R. T. Huidekoper, M. D. (Alfort, France), E. T. Carter (Pittsburg, Pa.), A. Martin (Cleveland, Ohio), J. C. McKenzie (Rochester, N. Y.), B. McInnes (Charleston, S. C.), E. Decroix (Paris, France), A. A. Holcombe (Fort Lavenworth, Kansas), Prof. Osler, M. D. (Montreal, Canada).